Marko Jak Tadjer

List of Publications by Citations

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

95 papers	3,471 citations	26 h-index	57 g-index
96 ext. papers	4,385 ext. citations	3.3 avg, IF	5.85 L-index

#	Paper	IF	Citations
95	A review of Ga2O3 materials, processing, and devices. *Applied Physics Reviews*, **2018**, 5, 011301	17.3	1114
94	Perspective: Ga2O3 for ultra-high power rectifiers and MOSFETS. *Journal of Applied Physics*, **2018**, 124, 220901	2.5	245
93	Homoepitaxial growth of β-Ga2O3 thin films by low pressure chemical vapor deposition. *Applied Physics Letters*, **2016**, 108, 182105	3.4	145
92	2300V Reverse Breakdown Voltage Ga2O3Schottky Rectifiers. *ECS Journal of Solid State Science and Technology*, **2018**, 7, Q92-Q96	2	116
91	Editors' Choice Communication—A (001) β-Ga2O3MOSFET with +2.9 V Threshold Voltage and HfO2Gate Dielectric. *ECS Journal of Solid State Science and Technology*, **2016**, 5, P468-P470	2	106
90	Vertical GaN Junction Barrier Schottky Rectifiers by Selective Ion Implantation. *IEEE Electron Device Letters*, **2017**, 38, 1097-1100	4.4	96
89	Heteroepitaxy of N-type β-Ga2O3 thin films on sapphire substrate by low pressure chemical vapor deposition. *Applied Physics Letters*, **2016**, 109, 132103	3.4	96
88	Structural, Optical, and Electrical Characterization of Monoclinic β-Ga2O3 Grown by MOVPE on Sapphire Substrates. *Journal of Electronic Materials*, **2016**, 45, 2031-2037	1.9	92
87	Editors' Choice—Review—Theory and Characterization of Doping and Defects in β-Ga2O3. *ECS Journal of Solid State Science and Technology*, **2019**, 8, Q3187-Q3194	2	89
86	Vertical Ga2O3 Schottky Barrier Diodes With Small-Angle Beveled Field Plates: A Baliga's Figure-of-Merit of 0.6 GW/cm2. *IEEE Electron Device Letters*, **2019**, 40, 1399-1402	4.4	84
85	. *IEEE Electron Device Letters*, **2012**, 33, 23-25	4.4	83
84	Quasi-Two-Dimensional h-BN/β-GaO Heterostructure Metal-Insulator-Semiconductor Field-Effect Transistor. *ACS Applied Materials & Interfaces*, **2017**, 9, 21322-21327	9.5	71
83	Thermal conductance across β-Ga2O3-diamond van der Waals heterogeneous interfaces. *APL Materials*, **2019**, 7, 031118	5.7	63
82	Heterostructure WSe-GaO Junction Field-Effect Transistor for Low-Dimensional High-Power Electronics. *ACS Applied Materials & Interfaces*, **2018**, 10, 29724-29729	9.5	60
81	Band Alignments of Atomic Layer Deposited ZrO2and HfO2High-k Dielectrics with (-201) β-Ga2O3. *ECS Journal of Solid State Science and Technology*, **2017**, 6, Q3052-Q3055	2	57
80	Ga2O3 Schottky rectifiers with 1 ampere forward current, 650 V reverse breakdown and 26.5 MW.cm-2 figure-of-merit. *AIP Advances*, **2018**, 8, 055026	1.5	51
79	Integration of polycrystalline Ga2O3 on diamond for thermal management. *Applied Physics Letters*, **2020**, 116, 062105	3.4	42

78	Atomic Layer Epitaxy AlN for Enhanced AlGaN/GaN HEMT Passivation. *IEEE Electron Device Letters*, **2013**, 34, 1115-1117	4.4	39
77	Electrical characterization of ALD HfO2 high-k dielectrics on (2□01) □Ga2O3. *Applied Physics Letters* , **2018**, 112, 042107	3.4	38
76	Selective p-type Doping of GaN:Si by Mg Ion Implantation and Multicycle Rapid Thermal Annealing. *ECS Journal of Solid State Science and Technology*, **2016**, 5, P124-P127	2	32
75	Thermionic Emission Analysis of TiN and Pt Schottky Contacts to □Ga2O3. *ECS Journal of Solid State Science and Technology*, **2017**, 6, P165-P168	2	31
74	Tunable Thermal Energy Transport across Diamond Membranes and Diamond-Si Interfaces by Nanoscale Graphoepitaxy. *ACS Applied Materials & Interfaces*, **2019**, 11, 18517-18527	9.5	30
73	Effect of surface treatments on electrical properties of □Ga2O3. *Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics*, **2018**, 36, 061201	1.3	30
72	GaN-On-Diamond HEMT Technology With TAVG = 176□C at PDC,max = 56 W/mm Measured by Transient Thermoreflectance Imaging. *IEEE Electron Device Letters*, **2019**, 40, 881-884	4.4	28
71	High resistivity halide vapor phase homoepitaxial □Ga2O3 films co-doped by silicon and nitrogen. *Applied Physics Letters*, **2018**, 113, 192102	3.4	27
70	A review of band structure and material properties of transparent conducting and semiconducting oxides: Ga2O3, Al2O3, In2O3, ZnO, SnO2, CdO, NiO, CuO, and Sc2O3. *Applied Physics Reviews*, **2022**, 9, 011315	17.3	27
69	Vertical geometry 33.2 A, 4.8 MW cm2 Ga2O3 field-plated Schottky rectifier arrays. *Applied Physics Letters*, **2019**, 114, 232106	3.4	26
68	High Performance ${beta}$ -Ga2O3 Nano-Membrane Field Effect Transistors on a High Thermal Conductivity Diamond Substrate. *IEEE Journal of the Electron Devices Society*, **2019**, 7, 914-918	2.3	24
67	Damage Recovery and Dopant Diffusion in Si and Sn Ion Implanted □Ga2O3. *ECS Journal of Solid State Science and Technology*, **2019**, 8, Q3133-Q3139	2	20
66	Dynamic Switching Characteristics of 1 A Forward Current $boldsymbol{beta}$ -Ga2O3 Rectifiers. *IEEE Journal of the Electron Devices Society*, **2019**, 7, 57-61	2.3	20
65	Vertical GaN Junction Barrier Schottky Diodes. *ECS Journal of Solid State Science and Technology*, **2017**, 6, Q10-Q12	2	18
64	The role of annealing ambient on diffusion of implanted Si in □Ga2O3. *AIP Advances*, **2019**, 9, 085111	1.5	18
63	Structural transition and recovery of Ge implanted □Ga2O3. *Applied Physics Letters*, **2020**, 117, 152101	3.4	18
62	Cheap Ultra-Wide Bandgap Power Electronics? Gallium Oxide May Hold the Answer. *Electrochemical Society Interface*, **2018**, 27, 49-52	3.6	18
61	Nanocrystalline diamond capped AlGaN/GaN high electron mobility transistors via a sacrificial gate process. *Physica Status Solidi (A) Applications and Materials Science*, **2016**, 213, 893-897	1.6	17

60	Ga2O3 Schottky barrier and heterojunction diodes for power electronics applications **2018**,		17
59	Diffusion of implanted Ge and Sn in Ga2O3. *Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics*, **2019**, 37, 051204	1.3	16
58	Reverse Breakdown in Large Area, Field-Plated, Vertical Ga2O3Rectifiers. *ECS Journal of Solid State Science and Technology*, **2019**, 8, Q3159-Q3164	2	16
57	Longitudinal phonon plasmon mode coupling in Ga2O3. *Applied Physics Letters*, **2019**, 114, 102102	3.4	16
56	Narrowband Polaritonic Thermal Emitters Driven by Waste Heat. *ACS Omega*, **2020**, 5, 10900-10908	3.9	16
55	Engineering the Spectral and Spatial Dispersion of Thermal Emission via Polariton-Phonon Strong Coupling. *Nano Letters*, **2021**, 21, 1831-1838	11.5	16
54	Characterization of Ga2O3 homoepitaxial films and MOSFETs grown by MOCVD at high growth rates. *Journal Physics D: Applied Physics*, **2021**, 54, 034005	3	15
53	Optical characterization and thermal properties of CVD diamond films for integration with power electronics. *Solid-State Electronics*, **2017**, 136, 12-17	1.7	13
52	Temperature and electric field induced metal-insulator transition in atomic layer deposited VO2 thin films. *Solid-State Electronics*, **2017**, 136, 30-35	1.7	13
51	Switching Behavior and Forward Bias Degradation of 700V, 0.2A, Ga2O3Vertical Geometry Rectifiers. *ECS Journal of Solid State Science and Technology*, **2019**, 8, Q3028-Q3033	2	12
50	Degradation of dynamic ON-resistance of AlGaN/GaN HEMTs under proton irradiation **2013**,		12
49	Valence band offsets for CuI on (-201) bulk Ga2O3 and epitaxial (010) (Al0.14Ga0.86)2O3. *Applied Physics Letters*, **2018**, 113, 182101	3.4	12
48	Forward bias degradation and thermal simulations of vertical geometry Ga2O3 Schottky rectifiers. *Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics*, **2019**, 37, 061205	1.3	11
47	Effect of probe geometry during measurement of >100 A Ga2O3 vertical rectifiers. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2021**, 39, 013406	2.9	11
46	Effect of thermal annealing for W/Ga2O3 Schottky diodes up to 600 °C. *Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics*, **2019**, 37, 061201	1.3	10
45	Electrothermal evaluation of thick GaN epitaxial layers and AlGaN/GaN high-electron-mobility transistors on large-area engineered substrates. *Applied Physics Express*, **2017**, 10, 126501	2.4	10
44	Structural and electronic properties of Si- and Sn-doped (201) Ga2O3 annealed in nitrogen and oxygen atmospheres. *Journal Physics D: Applied Physics*, **2020**, 53, 504002	3	10
43	A Tri-Layer PECVD SiN Passivation Process for Improved AlGaN/GaN HEMT Performance. *ECS Journal of Solid State Science and Technology*, **2017**, 6, P58-P61	2	9

42	Valence and Conduction Band Offsets for InN and III-Nitride Ternary Alloys on (2̄01) Bulk β-Ga2O3. *ECS Journal of Solid State Science and Technology*, **2019**, 8, Q3154-Q3158	2	9
41	Band Alignment of ScAlN/GaN Heterojunctions. *ACS Applied Materials & Interfaces*, **2020**, 12, 52192-52200	9.5	9
40	(Invited) Fabrication and Characterization of β-Ga2O3Heterojunction Rectifiers. *ECS Transactions*, **2018**, 85, 21-26	1	9
39	High-Resolution Thermoreflectance Imaging Investigation of Self-Heating in AlGaN/GaN HEMTs on Si, SiC, and Diamond Substrates. *IEEE Transactions on Electron Devices*, **2020**, 67, 5415-5420	2.9	8
38	Band Alignment of Atomic Layer Deposited SiO2 and Al2O3 on (AlxGa1-x)2O3 for x = 0.2-0.65. *ECS Journal of Solid State Science and Technology*, **2019**, 8, P351-P356	2	8
37	A perspective on the electro-thermal co-design of ultra-wide bandgap lateral devices. *Applied Physics Letters*, **2021**, 119, 170501	3.4	8
36	Implementation of a 900 V Switching Circuit for High Breakdown Voltage β-Ga2O3 Schottky Diodes. *ECS Journal of Solid State Science and Technology*, **2019**, 8, Q3229-Q3234	2	7
35	In Situ Observation of β-Ga2O3 Schottky Diode Failure Under Forward Biasing Condition. *IEEE Transactions on Electron Devices*, **2020**, 67, 3056-3061	2.9	7
34	Electrothermal Evaluation of AlGaN/GaN Membrane High Electron Mobility Transistors by Transient Thermoreflectance. *IEEE Journal of the Electron Devices Society*, **2018**, 6, 922-930	2.3	7
33	Long-wavelength dielectric properties and infrared active optical phonon modes of molecular beam epitaxy ScxAl1−xN determined by infrared spectroscopic ellipsometry. *Applied Physics Letters* , **2020**, 117, 232107	3.4	6
32	Two-step growth of β-Ga2O3 films on (100) diamond via low pressure chemical vapor deposition. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2021**, 39, 023411	2.9	6
31	Defect Characterization of Multicycle Rapid Thermal Annealing Processed p-GaN for Vertical Power Devices. *ECS Journal of Solid State Science and Technology*, **2019**, 8, P70-P76	2	6
30	Temperature dependent performance of ITO Schottky contacts on β-Ga2O3. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2021**, 39, 053405	2.9	6
29	Band Offsets of Insulating & Semiconducting Oxides on (AlxGa1-x)O3. *ECS Transactions*, **2019**, 92, 79-88	1	5
28	Asymmetrical Contact Geometry to Reduce Forward-Bias Degradation in β-Ga2O3 Rectifiers. *ECS Journal of Solid State Science and Technology*, **2020**, 9, 035007	2	5
27	Demonstration of CuI as a P-N heterojunction toβ-Ga2O3. *Applied Physics Express*, **2019**, 12, 104005	2.4	4
26	Vertical β-Ga2O3 Schottky rectifiers with 750 V reverse breakdown voltage at 600 K. *Journal Physics D: Applied Physics*, **2021**, 54, 305103	3	4
25	Effect of Annealing on the Band Alignment of ALD SiO2 on (AlxGa1-x)2O3 for x = 0.2 - 0.65. *ECS Journal of Solid State Science and Technology*, **2019**, 8, P751-P756	2	4

24	Ohmic contacts to gallium oxide **2019**, 211-230		4
23	Design of Ga2O3 modulation doped field effect transistors. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2021**, 39, 023412	2.9	4
22	Collective Phonon-Polaritonic Modes in Silicon Carbide Subarrays.. *ACS Nano*, **2021**,	16.7	4
21	Hexagonal boron nitride particles for determining the thermal conductivity of diamond films based on near-ultraviolet micro-Raman mapping. *Journal Physics D: Applied Physics*, **2017**, 50, 24LT01	3	3
20	Quantifying substrate removal induced electrothermal degradation in AlGaN/GaN HEMTs **2017**,		3
19	Thermoreflectance Temperature Mapping of Ga2O3 Schottky Barrier Diodes. *ECS Transactions*, **2019**, 89, 3-7	1	3
18	In Situ Transmission Electron Microscopy Observations of Forward Bias Degradation of Vertical Geometry Ga2O3 Rectifiers. *ECS Journal of Solid State Science and Technology*, **2020**, 9, 055008	2	3
17	Changes in band alignment during annealing at 600 °C of ALD Al2O3 on (InxGa1 x)2O3 for x = 0.25 0.74. *Journal of Applied Physics*, **2020**, 127, 105701	2.5	3
16	Lateral GaN JFET Devices on 200 mm Engineered Substrates for Power Switching Applications **2018** ,		3
15	Multi-frequency coherent emission from superstructure thermal emitters. *Applied Physics Letters*, **2021**, 118, 141102	3.4	2
14	Steady-state methods for measuring in-plane thermal conductivity of thin films for heat spreading applications. *Review of Scientific Instruments*, **2021**, 92, 044907	1.7	2
13	Delta-doped (AlxGa1)2O3/Ga2O3 heterostructure field-effect transistors by ozone molecular beam epitaxy. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2021**, 39, 033402	2.9	2
12	Lateral GaN JFET Devices on Large Area Engineered Substrates. *ECS Journal of Solid State Science and Technology*, **2019**, 8, Q226-Q229	2	2
11	Full 3D Thermal Simulation of GaN HEMT using Ultra-Fast Self-Adaptive Computations Driven by Experimentally Determined Thermal Maps **2018**,		2
10	Assessment of the (010) Ga2O3 surface and substrate specification. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2021**, 39, 013408	2.9	2
9	Band offset determination for amorphous Al2O3 deposited on bulk AlN and atomic-layer epitaxial AlN on sapphire. *Applied Physics Letters*, **2020**, 117, 182103	3.4	1
8	Phonon Properties. *Springer Series in Materials Science*, **2020**, 501-534	0.9	1
7	Simultaneous Evaluation of Heat Capacity and In-plane Thermal Conductivity of Nanocrystalline Diamond Thin Films. *Nanoscale and Microscale Thermophysical Engineering*,1-13	3.7	1

List of Publications

6	Design and implementation of floating field ring edge termination on vertical geometry Ga2O3 rectifiers. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2020**, 38, 063414	2.9	1
5	Effects of Downstream Plasma Exposure on Ga2O3 Rectifiers. *ECS Journal of Solid State Science and Technology*,	2	1
4	Annealing Effects on the Band Alignment of ALD SiO2 on (InxGa1x)2O3 for x = 0.250.74. *ECS Journal of Solid State Science and Technology*, **2020**, 9, 045001	2	
3	Influence of oxygen partial pressure on properties of monoclinic Ga2O3 deposited on sapphire substrates. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2021**, 39, 033414	2.9	
2	Thermal effects in Ga2O3 rectifiers and MOSFETs borrowing from GaN **2022**, 441-467		
1	Reduced-stress nanocrystalline diamond films for heat spreading in electronic devices **2022**, 275-294		